

Amendments to the Drawings

The attached sheet of drawings includes changes to Fig. 3. This sheet, which includes Fig. 3, replaces the original sheet including those same Figures.

The expression “ $52.4 * 2 * 480 = \mu 50.3 \text{ s (Valid Data Display)}$ ” has been changed to read

- - $52.4 * 2 * 480 = 50.3 \mu\text{s (Valid Data Display)}$ - -

Attachment: Replacement Sheet
Annotated Sheet Showing Changes

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 1-21 are now present in this application. Claims 1, 10 and 16 are independent.

Claims 1 and 7, 10, 15, 16 and 21 are amended. No new matter is involved.

Reconsideration of this application, as amended, is respectfully requested.

Priority Under 35 U.S.C. § 119

Applicants thank the Examiner for acknowledging Applicants' claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document.

Objection to the Drawings

The Examiner has objected to the drawings because an equation shown in Fig. 3 is not clearly stated. In order to overcome this objection, Applicants are concurrently submitting Proposed Drawing Corrections for the Examiner's approval, which clarify the equation in issue.

Accordingly, reconsideration and withdrawal of this objection are respectfully requested.

Rejection Under 35 U.S.C. § 112, 1st Paragraph

Claims 7 and 10-21 stand rejected under 35 U.S.C. § 112, 1st Paragraph, as failing to comply with the enablement requirement. This rejection is respectfully traversed.

Applicants have amended claims 7, 10, 15 and 21 by changing "back porch of the clock signal" to - - horizontal back porch - -, and by amending the preamble of independent claims 1, 10 and 16 to provide proper antecedent basis for the term "horizontal back porch," to overcome this rejection. Support for these amendments is found, for example, in Fig. 3, which illustrates the horizontal back porch of the video signal.

Reconsideration and withdrawal of this rejection of claims 7 and 10-21 under 35 U.S.C. § 112, first paragraph, are respectfully requested.

Rejection Under 35 U.S.C. § 112, 2nd Paragraph

Claims 1-9, 15 and 21 stand rejected under 35 U.S.C. § 112, 2nd Paragraph. This rejection is respectfully traversed.

The Examiner indicates that the claim language "short period" and "long period" is indefinite, that it is not clear which disclosed clock signal is what is recited in claim 1, and that the term "about" is unclear whether the terms following the word "about" are part of the claimed invention.

In order to overcome this rejection regarding the terms "long" and "short," Applicants have amended claim 1 to change "short period" to - - first period - -, and to change "long period" to - - second period longer than the first period, in accordance with the Examiner's suggestion.

With respect to the terminology "main clock" and "clock," Applicants have amended the terminology "clock signal having a long period" to read - - modulated clock signal having a

second period that is longer than the first period - -. Support for this Amendment is found, for example, in Fig. 3 and in paragraph [0035].

With respect to the term “about”, Applicants respectfully submit that the terminology “about 3.14 μ s” in claims 15 and 21, is clear and definite to one of ordinary skill in the art. Reference is made, in this regard to MPEP § 2173.05(b), paragraph A, which notes that where the term is used to define something clear but flexible, that the term can be considered clear. In this instance, Applicants’ drawing Fig. 3 discloses a more specific number, i.e., “3.144 μ s.” This clearly serves as the basis for the more approximate language in the claim of “about 3.14 μ s,” and reflects the fact that actual empirical readings of quantities of such short duration can vary from instrument to instrument.

Accordingly, reconsideration and withdrawal of this rejection of claims 1-9, 15 and 21 are respectfully requested.

Rejections under 35 U.S.C. § 103

Claims 1, 2, 4, 7-12 and 16-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 6,362,804 to Park et al. (“Park”) in view of U.S. Patent 6,721,009 to Iizuka and further in view of Applicants’ Admitted Prior Art (AAPA). This rejection is respectfully traversed.

A complete discussion of the Examiner’s rejection is set forth in the Office Action, and is not being repeated here.

Because the rejection is based on 35 U.S.C. § 103, what is in issue in such a rejection is

“the invention as a whole, “not just a few features of the claimed invention. Under 35 U.S.C. § 103, “ [a] patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” The determination under §103 is whether the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. See In re O’ Farrell, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988). In determining obviousness, the invention must be considered as a whole and the claims must be considered in their entirety. See Medtronic, Inc. v. Cardiac Pacemakers, Inc., 721 F.2d 1563, 1567, 220 USPQ 97, 101 (Fed. Cir. 1983).

In rejecting claims under 35 U.S.C. § 103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the Examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital

Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783, 84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A suggestion, teaching, or motivation to combine the prior art references is an “essential evidentiary component of an obviousness holding.” C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not “evidence.” See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

Moreover, it is well settled that the Office must provide objective evidence of the basis used in a prior art rejection. A factual inquiry whether to modify a reference must be based on objective evidence of record, not merely conclusory statements of the Examiner. See, In re Lee, 277 F.3d 1338, 1343, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002).

Furthermore, during patent examination, the PTO bears the initial burden of presenting a *prima facie* case of unpatentability. In re, Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785788 (Fed. Cir. 1984). If the PTO fails to meet this burden, then the Applicant is entitled to the patent. Only when a *prima facie* case is made, the burden shifts to the Applicant to come forward to rebut such a case.

Applicants respectfully submit that this rejection is improper for a number of reasons.

Firstly, the base reference to Park does not disclose (1) that its latching pixel data for a black display is accomplished “by using a main clock signal having a first period synchronized to the SSP signal,” as claimed, or that its latching pixel data corresponding to a normal mode is accomplished “by using a modified clock signal having a longer period than the first period.

Secondly, with respect to all claims, the reference to Park clearly does not disclose or suggest “first skipping data latch during a first transition period of the video signal,” and with respect to claims 1-9, Park clearly does not disclose or suggest “second skipping data latch during a second transition period of the video signal.”

In an attempt to remedy these deficiencies, the Office Action first turns to Iizuka which, unlike Park, is not directed to an LCD display. Instead, Iizuka is directed to a “video camera” (col. 1, lines 36-38) in general and, in particular, to driving “a CCD solid state imaging device used for a video camera as imaging means” (col. 1, lines 39-43. In other words, Iizuka is directed to a video camera’s CCD sensor, not to an LCD display device. Iizuka is directed to solving problems associated with a video camera that has to output signals in both a 4:3 ratio and a 16:9 ratio. The specific problems that Iizuka seeks to remedy are discussed in detail in col. 3,

lines 14-32, and simply do not exist in Parks, which is an LCD system, not a CCD image sensor in a video camera. For example Parks' LCD system does not have a CCD sensor video camera's "inconvenience in that unnecessary radiation is increased; transfer speed of the horizontal register is made higher; power consumption of the horizontal register is enlarged; and a fraction defective in transfer of the horizontal register is increased, that is addressed by Iizuka's invention.

The Office Action fails to address these fundamental differences between an LCD display and a video camera CCD sensor used to output images to video displays. In fact, the Office Action characterizes Iizuka by stating that "Iizuka teaches a driving method for a display . . ." Actually, Iizuka is directed not to a method of driving an LCD display, but is really directed to a method of driving a CCD solid state image sensing device. This mischaracterization of what Iizuka does disclose overlooks the fundamental difference between a sensor and a display, and completely fails to provide any objective factual evidence of why one of ordinary skill in the art of LCD displays would turn to a video camera sensor driving system to modify an LCD display driving system.

Furthermore, a specific object of Iizuka is to drive a CCD sensor array that is capable of lowering the frequency of a drive pulse of the horizontal register for discharging signal charges (col. 4, lines 3-9), which does not appear to be an issue with Park's LCD system, and the Office Action fails to present objective factual evidence that explains why one of ordinary skill in the art would be properly motivated to turn to Iizuka to modify Park, especially in view of the fact that Park has no need to provide such a feature in its LCD system.

The Office Action focuses on Fig. 5 of Iizuka, and asserts that Iizuka teaches skipping data latch during a transition period of a video signal by means of a “discharge period for unnecessary signal.” Applicants disagree with this characterization of Iizuka, which has no disclosure of latching pixel data for a display, let alone an LCD display, as claimed.

The Office Action then concludes that it would be obvious to modify Parks’ driving method to include discharge periods and transfer periods in Park’s blanking period, as taught by Iizuka. Applicants respectfully disagree, because these devices are substantially different, one being an LCD display and the other being a CCD image sensor, and the Office Action fails to explain why one of ordinary skill in the art would use CCD image sensor discharge and transfer periods in an LCD system, or how an LCD system would work using charge coupled display mechanisms that are not even found in an LCD system.

The Office Action further concludes that the reason that one of ordinary skill in the art would be motivated to do so is “to reduce the drive frequency of the horizontal register for discharging unnecessary signal charges,” as disclosed in col. 6, lines 40-43 of Iizuka. Applicants strenuously disagree with this conclusion because the Office Action has completely fails to present objective factual evidence that one of ordinary skill in the art would be motivated to use CCD drive frequency reduction techniques in Park’s LCD system, which has no need for such a feature.

The Office Action then admits that Iizuka does not have a main clock having a first period and a clock signal having a second period longer than the first, to be used for determining the periods for latching pixel data for a black display and for latching pixel data for an image

display. Applicants not only agree with this admission by the Office Action, but point out that there is a good reason for this, i.e., because Iizuka is not a display, but is a CCD sensor.

Furthermore, Iizuka, like Park, does not disclose skipping data latch during transition period of the video signal, as recited.

In an attempt to remedy the admitted deficiencies of Park and Iizuka, the Office Action turns to Applicants' disclosure of Fig. 2, which represents an LCD display scheme that applies undesired pixel data, i.e., undesired lines and the black display is not generated in the block having a transition area TA in the video signal or on the displayed screen (Applicants' specification, paragraph [0016]). In view of Applicants' Fig. 2, the Office Action concludes that it would be obvious to modify Park to "determine the periods for latching the pixel data for black display and an image display by using clock signals having different periods . . . since it is well known to use clock signals to synchronize the timings of supplying data signals."

Applicants respectfully disagree with this conclusion because (1) the general use of clock signals to synchronize timings of supplying data signals provides no guidance as to the specific claimed latch timing(s), and (2) as pointed out by Applicants in paragraph [0016], the related art of Fig. 2 has significant shortcomings, one of which is that it does not generate black on the display screen. So, one of ordinary skill in the art would not be motivated to modify Park in view of the related art techniques of Applicants' Fig. 2 because, if they are applied to Park, they will result in a display with undesirable characteristics, i.e., they teach away from the proposed modification of Park.

To establish a *prima facie* case of obviousness, the Office Action must show "some

objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references.” In re Fine, 837 F.2d at 1074, 5 USPQ2d 1t 1598. There is no suggestion to combine, however, if a reference teaches away from its combination with another source. See *id.* at 1075, 5 USPQ2d at 1599. “A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the Applicants . . . [or] if it suggests that the line of development flowing from the reference’s disclosure is unlikely to be productive of the result sought by the Applicants.” In re Gurley, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).

Applicants respectfully submit that the aforementioned fundamental differences between Parks and Iizuka actually teach away from motivating one of ordinary skill in the art to make the proposed modification of Parks.

Furthermore, Applicant’s admitted prior art, like Park and Like Iizuka, does not disclose skipping data latch during transition period of the video signal, as recited. So even if, solely for the sake of argument, one of ordinary skill in the art were properly motivated to modify Park in view of Iizuka and further in view of AAPA, the resulting modified version of Park would not disclose, suggest, or otherwise render obvious, the claimed invention.

Accordingly, the Office Action fails to make out a *prima facie* case of obviousness of the claimed invention.

Reconsideration and withdrawal of this rejection of claims 1, 2, 4, 7-12 and 16-18 are

respectfully requested.

Allowable Subject Matter

The Examiner has not rejected claims 3, 5, 6, 13-15 and 19-21 over prior art. Applicants have not re-written these claims in independent form, however, because Applicants respectfully submit that the claims from which they depend are allowable, for reasons stated above.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46, 472, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

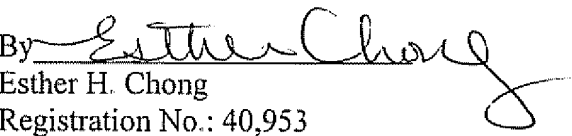

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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: April 4, 2007

Respectfully submitted,

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Attachment: Replacement Drawing Sheets
Annotated Drawing Sheets